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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/889,930	10/03/2001	Thelka Kurz	MERCK 2293	4412

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MILLEN, WHITE, ZELANO & BRANIGAN, P.C.
2200 CLARENDON BLVD.
SUITE 1400
ARLINGTON, VA 22201

EXAMINER	
WANG, SHENGJUN	
ART UNIT	PAPER NUMBER
1617	

DATE MAILED: 01/29/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/889,930	Applicant(s) KURZ ET AL.	
	Examiner Shengjun Wang	Art Unit 1617	

-- The MAILING DATE of this communication appears on the cover sheet with the corresp ndence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *6* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections 35 U.S.C. 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 1-3 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for compounds specified in claim 4 does not reasonably provide enablement for any other compounds encompassed within the claimed scope. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims. Applicant's claims encompass any compound, which may be subjected to lyophilization.

Applicant's specification discloses how certain compounds may be applied to the claimed process to obtain a lyophilisate with improved solubility. See pages 6-7 therein. The specification contains no guides, directions or working examples showing how any further any other compounds may be employed in the claimed process, since any significant structural variation to a compound would be reasonably expected to alter its physical properties. It is well known in the art that lyophilization process depend on a variety of factors. See the entire article of Franks (IDS). One of ordinary skill in the art would have a reasonable doubt that the claimed process would work for any other compounds with different chemical structures, such as proteins. Further one of ordinary skill would be required to perform undue experimentation to determine which, if any, other compounds could be applied to the claimed process yielding a lyophilisate with improved solubility.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. The term "improved" and "desired low" in claims 1, 5-8 are relative terms which render the claim indefinite. The term "improved" and "desired low" are not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The claims are indefinite as to the improvement or the low temperature encompassed thereby.

4. Claim 1 recites the limitation "the corresponding solutions" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

5. Claim 1, 5-8 recites the limitation "the desired low freeze-drying temperature" in the last line. There is insufficient antecedent basis for this limitation in the claim.

Claims 1, 5-8 recite the limitation "drawn off", there is no clear definition of "drawn off" in the claims or in the specification. The claims are indefinite as to the step "drawn off" encompassed thereby.

6. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by

"such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 1, 5-8 recite the broad recitation a solution has been drawn off, filtered, ..., and the claim also recites 'if necessary, previously been warmed" which is the narrower statement of the range/limitation.

Claim Rejections 35 U.S.C. 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claim 5 is rejected under 35 U.S.C. 102(b) as being anticipated by Bornstein et al. (US Patent 4,002,748) or Palepu et al. (U.S. Patent 5,066,647).

The references teach lyophilisates with improved reconstitutability. See the abstracts of the references. The lyophilisates disclosed in the prior arts have essentially the same function as the lyophilisate claimed herein. The lyophilisates are considered to be equivalent since they have the essentially the same functions.

Claim Rejections 35 U.S.C. 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gericke et al. (US Patent 5,753,680) in view of Bornstein et al. (US Patent 4,002,748, IDS) or Palepu et al. (U.S. Patent 5,066,647), Franks (IDS) and further in view of Lang et al. (U.S. Patent 5,591,754) and Gericke (US Patent 5,744,641).

11. Gericke et al ('680) teaches a lyophilisate of sulfonylbenzoylguanidine derivative suitable for reconstitution and injection, and the process of making the same. See, particularly, column 19, lines 20-29. The process comprising dissolving the active compound, sterile filtration, transferring the filtered solution to a vial and lyophilization.

12. Gericke et al. ('680) does not teaches expressly the claimed process herein which differs from Gericke's by a warming-up step before lyophilization, or the lyophilisates of particular sulfonylbenzoylguanidines herein.

13. However, Franks teaches that the process of lyophilization is now well understood and the process may be optimized by controlling a variety of factors including shelf temperature, time (for cooling, annealing) etc. See the entire document, particularly, page 222, section 4. What can be controlled. Both Bornstein et al. (US Patent 4,002,748, IDS) or Palepu et al. (U.S. Patent 5,066,647) teach it is desirable to make a reconstitutable lyophilisate for therapeutical purpose. See, particularly, the abstracts. Further, one of ordinary skill in the art would recognize the benefit of rapidly dissolving particle free lyophilisate for injection formulation.

Therefore, it would have been prima facie obvious to a person of ordinary skill in the art, at the time the claimed the invention was made, to optimize the lyophilization process including the temperature of shelf and the annealing time, e.g. keeping the solution in the vial at about room temperature (30 oC) for a while before lyophilization.

A person of ordinary skill in the art would have been motivated to optimize the lyophilization process including the temperature of shelf and the annealing time, e.g. keeping the solution in the vial at about room temperature (30 oC) for a while before lyophilization because such optimization is considered a optimization of a result effective parameter, e.g., temperature, is considered within the skill of the artisan. See, In re Boesch and Slaney (CCPA) 204 USPQ 215. Regarding the particular compounds, it is obvious to make lyophilisates of these compounds because they are all sulfonylbenzoylguanidine derivatives and are known to be similarly useful as pharmaceutical agents. See, particularly, the abstract, columns 1-4, column 12, lines 49-50 in Gericke et al. ('680), column 27, lines 4-5 in Gericke et al. ('641) and column 18, lines 36-40 in Lang. The composition claims 5-12 are obvious over the cited prior art also because it only differ from the prior art by the process of making. Note a product by process must have elements that are different from the prior art. See, MPEP 2183-2184. No such elements are seen in the claimed product. Particularly, since the lyophilisate in Gericke et al. ('680) is suitable for reconstitution and injection, it would have the properties such as reconstitutable and particle free, absent evidence to the contrary.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shengjun Wang, Ph.D. whose telephone number is (703) 308-4554. The examiner can normally be reached on Monday-Friday from 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minna Moezie, J.D., can be reached on (703) 308-4612. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-4556.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1235.

S. Wang

Shengjun Wang

AU 1617

January 26, 2002

RUSSELL TRAVERS
PRIMARY EXAMINER
GROUP 1200